

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,115,210 B2  
APPLICATION NO. : 10/708009  
DATED : October 3, 2006  
INVENTOR(S) : Calderoni et al.

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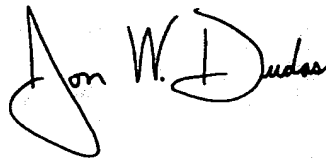
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Delete Title page illustrating figure, and substitute therefor, new Title page illustrating figure. (attached)

Delete drawing figures 1-4, and substitute therefor drawing figures 1-4, as shown on the attached sheets.

Signed and Sealed this

Sixteenth Day of January, 2007

A handwritten signature in black ink, reading "Jon W. Dudas". The signature is stylized, with a large, looped initial "J" and a cursive "Dudas".

JON W. DUDAS  
*Director of the United States Patent and Trademark Office*

(12) **United States Patent**  
Calderoni et al.

(10) Patent No.: **US 7,115,210 B2**  
(45) Date of Patent: **Oct. 3, 2006**

(54) **MEASUREMENT TO DETERMINE PLASMA LEAKAGE**

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(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 132 days.

(21) Appl. No.: 10/708,009

(22) Filed: Feb. 2, 2004

(65) Prior Publication Data  
US 2005/0167396 A1 Aug. 4, 2005

(51) Int. Cl.  
H01J 21/302 (2006.01)

(52) U.S. Cl. 216/59; 216/61; 118/712; 275/E21.528; 438/14; 438/16; 455/118

(58) Field of Classification Search 216/59, See application file for complete search history.

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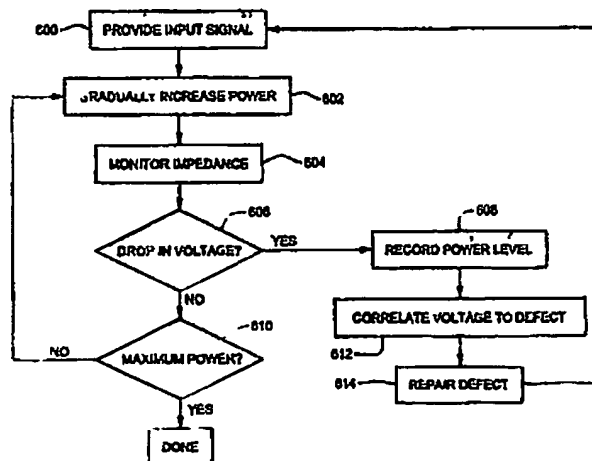
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Anthony Canale

(57) **ABSTRACT**

Disclosed is a method and system for detecting abnormal plasma discharge that is useful in, for example, detecting plasma leakage in a reactive ion etching (RIE) chamber. The system includes electrical contacts connected to the chamber that provide an input signal to the chamber. This input signal can be generated by a radio frequency (RF) generator that is connected to the electrical contacts. A variable power controller connected to the RF generator gradually increases (ramps) the power of the input signal being supplied to the chamber.

14 Claims, 4 Drawing Sheets



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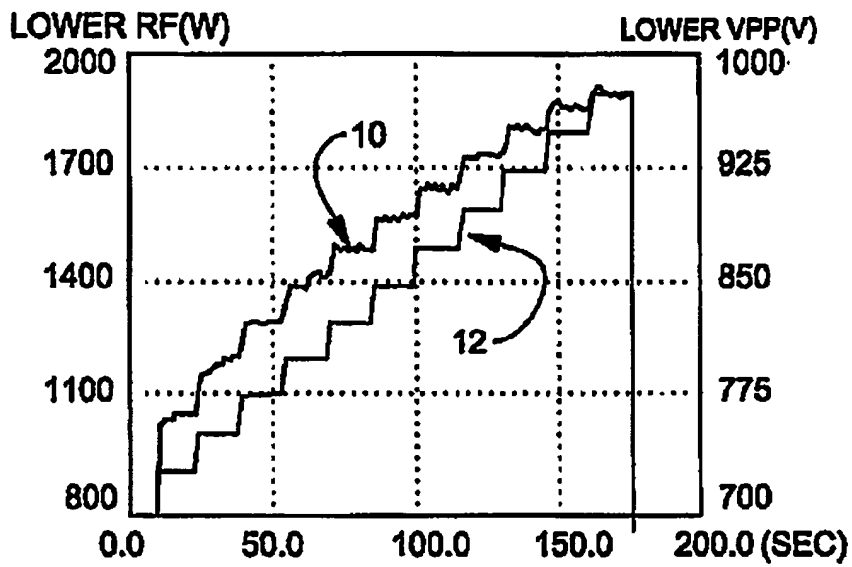


FIG. 1

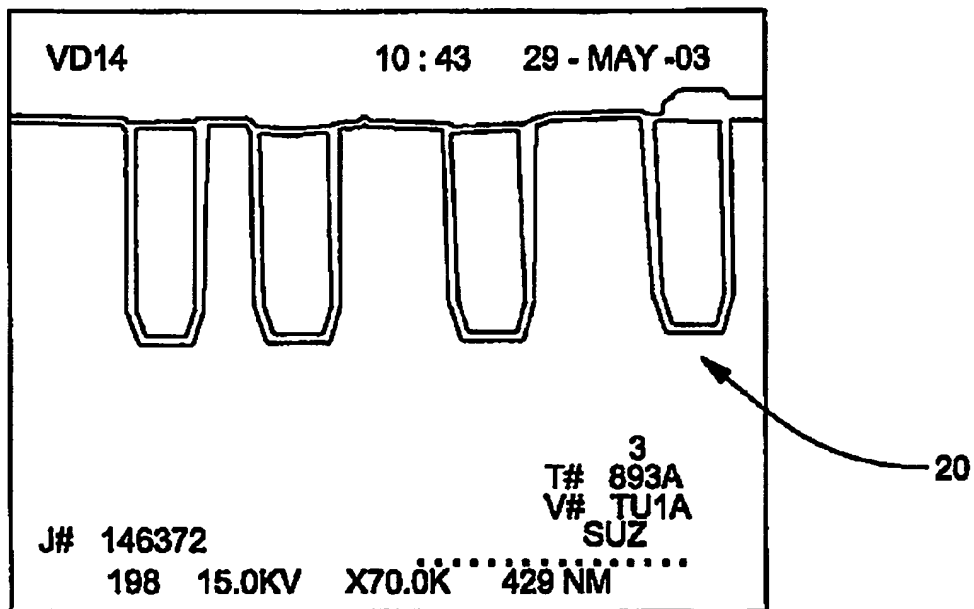


FIG. 2

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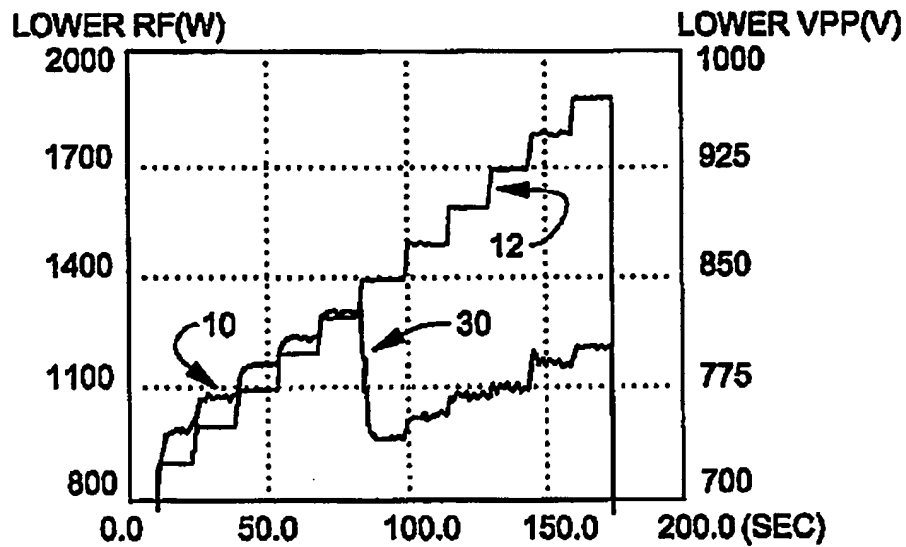


FIG. 3

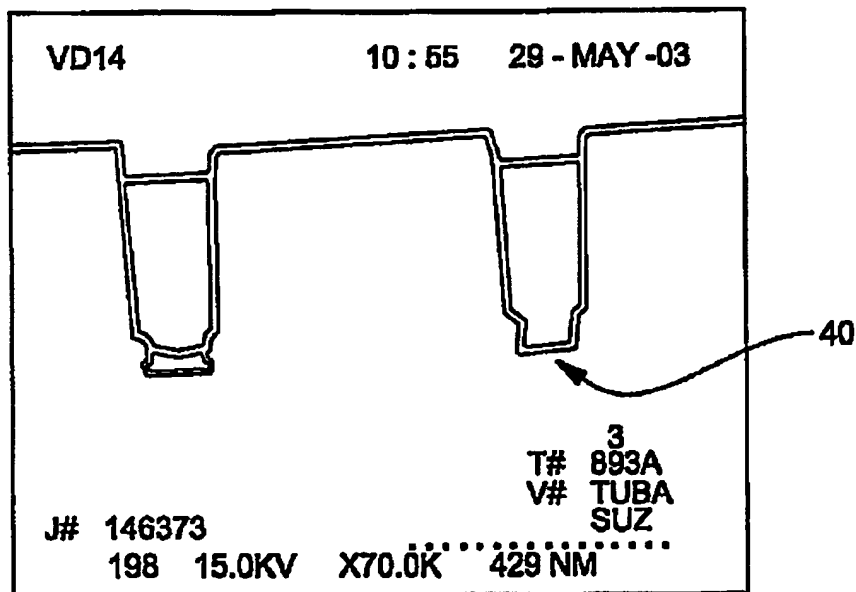


FIG. 4

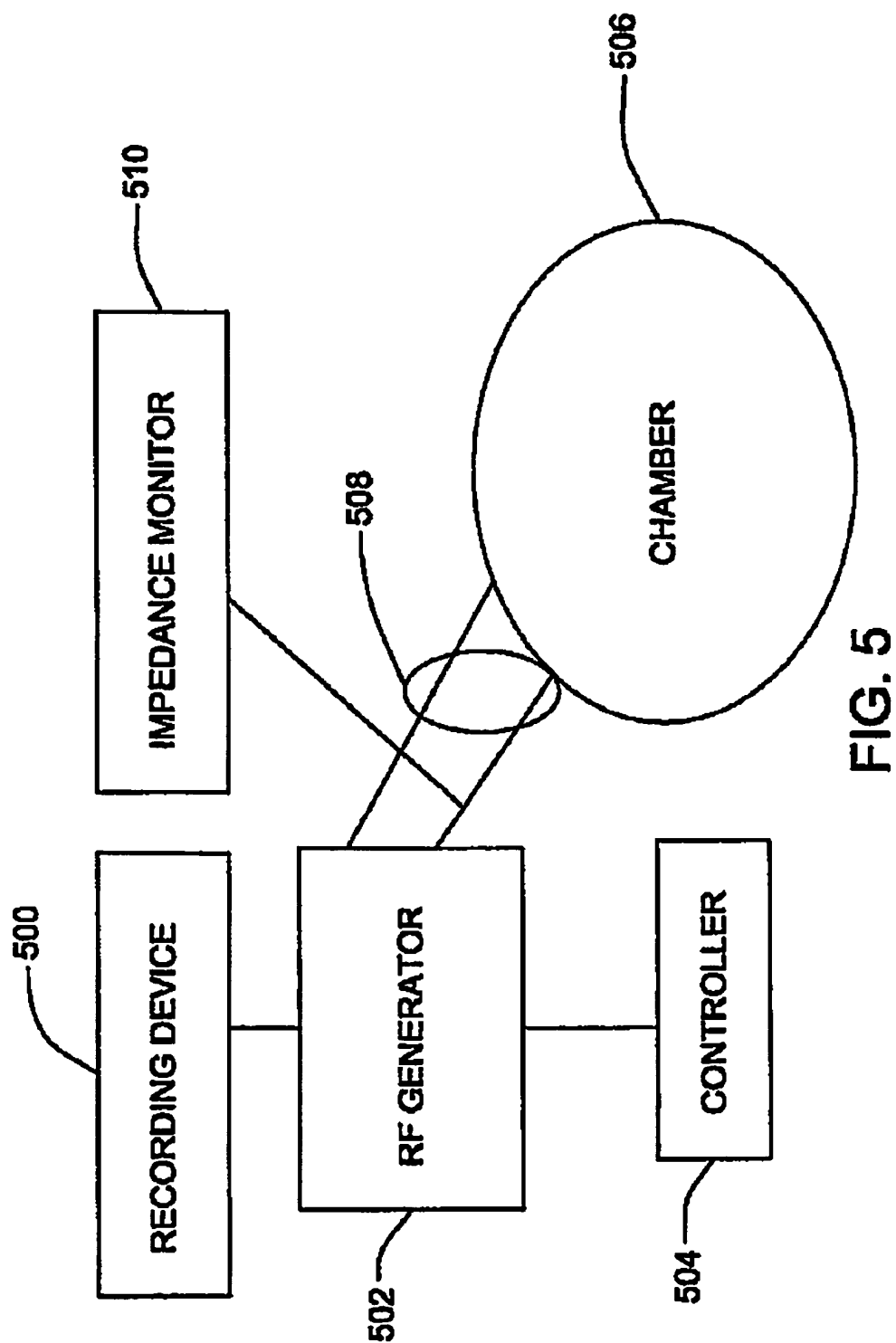


FIG. 5

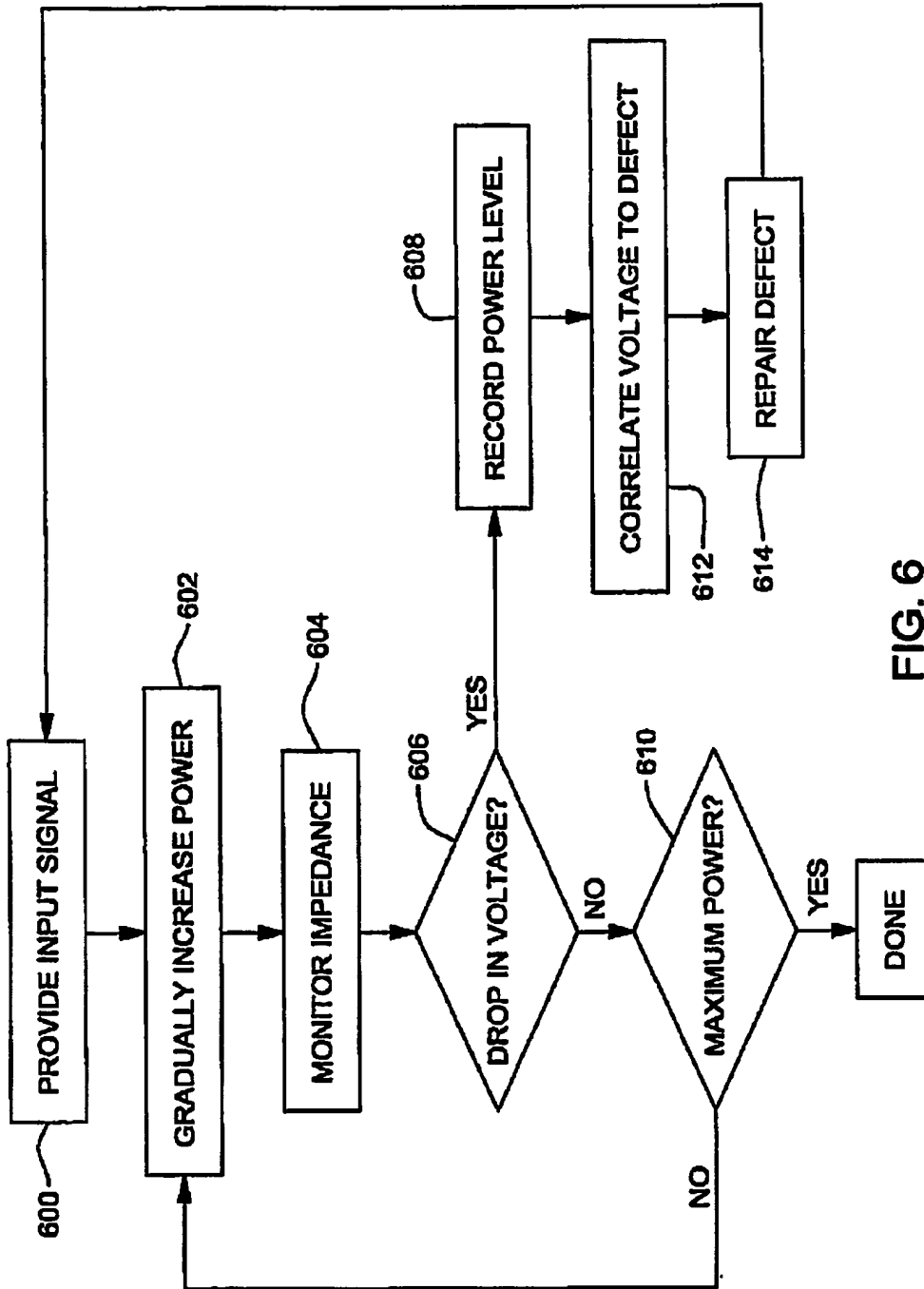


FIG. 6